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Video based solution for queue management.

Best practice

Greater Traveler Satisfaction and Improved Security Operations

Long lines often form in front of security checkpoints in airports. These frustrate travelers and cause stress for security personnel. To prevent this, waiting time displays have been introduced as part of a pilot in front of the checkpoint at Budapest Airport's Terminal 2A.

Everyone who travels by plane is familiar with the procedure: Prior to departure, your carry-on luggage is passed through an X-ray, while you're scanned and potentially patted down. The security check takes a while; you can find annoyed travelers standing in long lines in front of security checkpoints at virtually every airport in the world at peak travel times.

For Istvan Szabo, dealing with this issue is part of his everyday work. As Security Director of Budapest Ferenc Liszt International Airport, he is responsible for ensuring that security checks are carried out thoroughly yet efficiently. To better facilitate this, he sought out a technical solution that would build of the existing infrastructure already in place. Quote: "I want to use what is already there and not invest in an additional system".

THE INITIAL SITUATION: TWO TERMINALS, ONE CHALLENGE

”Our airport has two terminals, each with its own checkpoint,” Szabo explains.

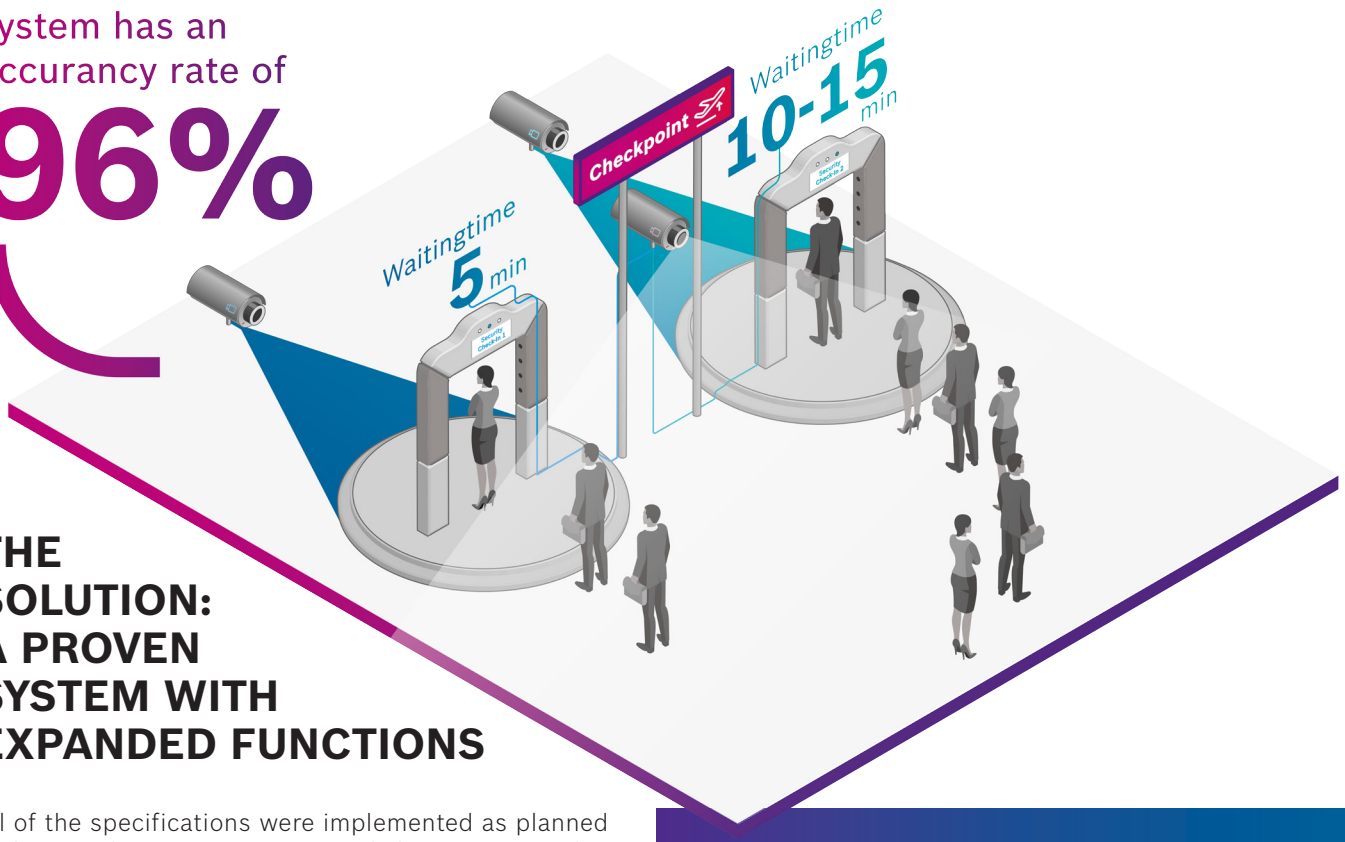
”The challenge lay in evenly distributing travelers between both checkpoints to keep waiting times as short as possible.”

As an experienced Security Director, Szabo knows that as lines grow in front of security checks, travelers get more and more annoyed, and the security risk for might increase, too. In the past, Szabo’s employees were mainly responsible for evenly distributing travelers between the two checkpoints: Control Room Operators monitored the situation in front of the checkpoints using a camera system. If the line in front of one of the stations got too long, the CROs tasked Landside Coordinators with directing travelers to the other station.

Szabo wanted to optimize this process. Above all, he wanted to make good use of the existing camera system: “We wanted to use the video cameras for surveillance as well as to help us calculate the waiting times in front of the security checkpoints.” It was important for him not to have to acquire and set up an entirely new system infrastructure; Szabo wanted to work with the existing system.

system has an accurancy rate of

96%



THE SOLUTION: A PROVEN SYSTEM WITH EXPANDED FUNCTIONS

All of the specifications were implemented as planned – the Bosch FLEXIDOME IP starlight 7000 VR video cameras could be integrated into the existing infrastructure. Thanks to the high contrast, low noise and extreme dynamic range they deliver excellent video images as input to the analytics processing which can produce highly accurate counting data.

This data is sent to a central application and also stored in case security staff need to review it. In order to proof past waiting times in case of passenger claims on missed flights.

The solution recognizes how many people are standing in front of each security checkpoint and how long they need, on average, to pass through the security check. This calculation is carried out in real time. The testing phase for the algorithm lasted three weeks and achieved an accuracy rate of 96 percent. The accuracy was validated by measuring waiting time in the field.

- Improved passenger experience through display of waiting times at the various checkpoints
- Increased security through fewer crowds forming in front of security checkpoints
- Optimized staff planning with display of historical data, which Security Directors can use to plan personnel more precisely
- Improved security operations because rerouting of passengers no longer need manual intervention

THE TAKEAWAYS: HOW TO IDEALLY POSITION THE VIDEO CAMERAS

”The situation at airports is tricky, especially at security checkpoints,” says András Tusán, Sales Manager at Popcode.

”There are often crowds of people packed closely together. The challenge for us was dealing with overlaps.”

Testing in a real environment was necessary to determine the required number of video cameras and their ideal positioning. The company found that the two cameras initially in use didn’t suffice. Instead, five cameras in total were required: one at the security checkpoint entrance, and four additional ones behind the checkpoint (one at each exit).

THE OUTLOOK: ENHANCED CUSTOMER SERVICE THANKS TO MORE DATA

Now that the system for predicting waiting times at Budapest Airport has successfully passed the internal tests, Szabo has further plans. “As a next step, we’d be interested in displaying the respective waiting time for each terminal on our airport app. That way, travelers could access this information at an even earlier stage along their journey.” The general objectives are clear: to enhance customer service even further and promote innovation at Budapest Ferenc Liszt International Airport. Maarten Wings, Global Vertical Manager Airports at Bosch Security and Safety Systems, identifies these objectives as large-scale trends. He is convinced that more cameras will be installed at airports. Airports won’t just focus on collecting the footage; instead, they’ll concentrate on making intelligent use of the cameras. The example at Budapest Airport has proofed that thanks to the collected data security processes can be improved.

Wings sees Bosch as a partner for airport operators:

”We can offer the experience we have gained from cooperating with over 300 airports, and we can integrate our cameras into existing infrastructures. We are also open to working with additional partners, like in this case Popcode.
Our goal is to support customers in solving their problems to the greatest possible extent.”

Global Vertical Manager Airports at Bosch Security Systems

More Information: **boschsecurity.com**